AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1.-19. (canceled)

20. (previously presented) A cooling system for providing cryogenic cooling fluid to an apparatus, the system comprising:

a re-circulation device;

a fluid communication feed line connecting the re-circulation device to the apparatus for communicating the fluid to the apparatus, the fluid communication feed line including:

a first passive cold storage device;

a second passive cold storage device serially connected downstream from the first passive cold storage device; and

a fluid communication return line connecting the apparatus to the re-circulation device for communicating the fluid from the apparatus to the re-circulation device;

wherein at least one of the first and second passive cold storage devices comprises a porous matrix of material which directly contacts the cryogenic cooling fluid as the cryogenic cooling fluid passes therethrough.

21. (original) A cooling system as in claim 20 wherein the porous matrix of material comprises a porous matrix of metal wire mesh.

22. (original) A cooling system as in claim 20 wherein the porous matrix of material comprises a porous matrix of metal spheres.

23. (original) A cooling system as in claim 20 wherein the porous matrix of material comprises a porous matrix of ceramic spheres.

24. (previously presented) A cooling system as in claim 20 further comprising a first cryogenic refrigerator thermally coupled to the first passive cold storage device and a second cryogenic refrigerator thermally coupled to the second passive cold storage device.

25. (original) A cooling system as in claim 24 wherein the first cryogenic refrigerator cools the first passive cold storage device to a first temperature and the second cryogenic refrigerator cools the second passive cold storage device to a second temperature, the first and second temperatures being different.

26. (original) A cooling system as in claim 25 wherein the first temperature is higher than the second temperature.

27.-28. (canceled)

29. (previously presented) A method of providing a cooling fluid to an apparatus, the method comprising:

communicating the fluid to the apparatus through a fluid communication feed line, the fluid communication feed line including a first passive cold storage device and a second passive cold storage device serially connected downstream from the first passive cold storage device; and

communicating the fluid from the apparatus to a re- circulating device through a fluid communication return line;

wherein at least one of the first and second passive cold storage devices comprises a porous matrix of material which directly contacts the cryogenic cooling fluid as the cryogenic cooling fluid passes therethrough.

30. (original) A method as in claim 29 wherein the porous matrix of material comprises a porous matrix of metal wire mesh.

31. (original) A method as in claim 29 wherein the porous matrix of material comprises a porous matrix of metal spheres.

32. (original) A method as in claim 29 wherein the porous matrix of material comprises a porous matrix of ceramic spheres.

33. (previously presented) A method as in claim 29 further comprising thermally coupling a first cryogenic refrigerator to the first passive cold storage device and thermally coupling a second cryogenic refrigerator to the second passive cold storage device.

34. (previously presented) A method of providing a cooling fluid to an apparatus, the method comprising:

communicating the fluid to the apparatus through a fluid communication feed line, the fluid communication feed line including a first passive cold storage device and a second passive cold storage device serially connected downstream from the first passive cold storage device;

communicating the fluid from the apparatus to a re- circulating device through a fluid communication return line; and

thermally coupling a first cryogenic refrigerator to the first passive cold storage device and thermally coupling a second cryogenic refrigerator to the second passive cold storage device;

wherein the first cryogenic refrigerator cools the first passive cold storage device to a first temperature and the second cryogenic refrigerator cools the second passive cold storage device to a second temperature, the first and second temperatures being different.

35. (original) A method as in claim 34 wherein the first temperature is higher than the second temperature.

36. (original) A method as in claim 35 wherein at least a third passive cold storage device is connected downstream from the second passive cold storage device, the third passive cold storage device being cooled by a third cryogenic refrigerator to a third temperature, the second temperature being higher than the third temperature.

37. (previously presented) A cooling system for providing cryogenic cooling fluid to an apparatus, the system comprising:

a re-circulation device;

a fluid communication feed line connecting the re-circulation device to the apparatus for communicating the fluid to the apparatus, the fluid communication feed line including:

a first passive cold storage device;

a second passive cold storage device serially connected downstream from the first passive cold storage device;

a fluid communication return line connecting the apparatus to the re-circulation device for communicating the fluid from the apparatus to the re-circulation device; and

a first cryogenic refrigerator thermally coupled to the first passive cold storage device and a second cryogenic refrigerator thermally coupled to the second passive cold storage device;

wherein the first cryogenic refrigerator cools the first passive cold storage device to a first temperature and the second cryogenic refrigerator cools the second passive cold storage device to a second temperature, the first temperature being higher than the second temperature; and

the cooling system further comprises at least a third passive cold storage device, the third passive cold storage device being cooled by a third cryogenic refrigerator to a third temperature, the second temperature being higher than the third temperature.